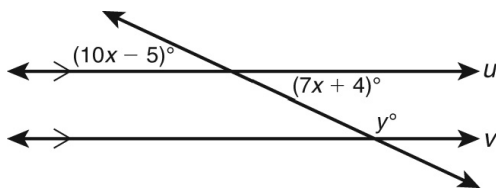


Geometry Chapter 4 Practice Test**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- _____ 1. Two vertical angles are also complementary. What is the measure of one of the two vertical angles?
A 90° C 45°
B 50° D 25°
- _____ 2. The area of a square is 16 square units. What is the perimeter?
F 4 units H 16 units
G 8 units J 32 units
- _____ 3. The midpoint of a segment is $(-8, 5)$. If one endpoint is $(0, 1)$, what is the other endpoint?
A $(-16, 9)$ C $(-4, 2)$
B $(8, -3)$ D $(-4, 3)$
- _____ 4. Which is a counterexample of the statement?
If an animal has wings, then it can fly.
F penguin H duck
G robin J rabbit
- _____ 5. If $u \parallel v$, what is the value of y ?



- A 58 C 142
B 122 D 155

Matching

Match each vocabulary term with its definition.

- A acute triangle
B equilateral triangle
C right triangle
D obtuse triangle
E isosceles triangle
F equiangular triangle
G scalene triangle

- _____ 1. a triangle with three acute angles
_____ 2. a triangle with at least two congruent sides
_____ 3. a triangle with one obtuse angle

Name: _____

ID: A

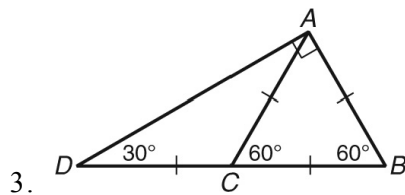
- _____ 4. a triangle with three congruent sides
- _____ 5. a triangle with one right angle

Short Answer

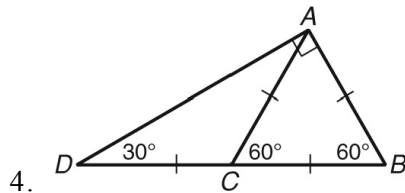
1. Identify and describe the transformation:

$$M: (x, y) \rightarrow (-x, y)$$

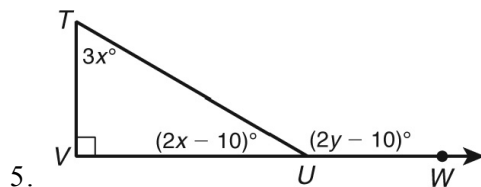
2. Prove that triangles $F(4, 6)$, $G(5, 7)$, $H(7, 4)$ and $J(1, -4)$, $K(2, -5)$, $L(4, -2)$ are congruent.



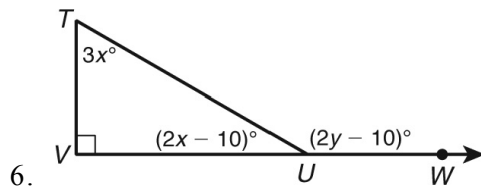
Classify $\triangle ABC$ by angle measures.



Classify $\triangle ABD$ by side lengths.



What is $m\angle T$?

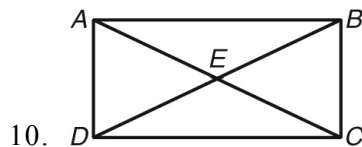
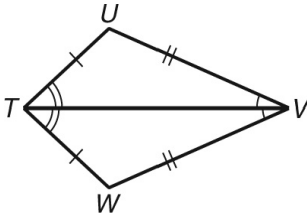


What is the value of y ?

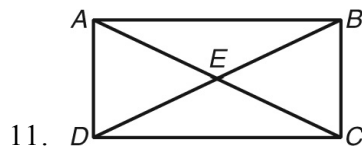
7. Given $\triangle QRS \cong \triangle STQ$, $\angle R = 4x^2 - 4$, and $\angle T = 3x^2 - 3x$. What is $m\angle R$?

8. Given $\triangle QRS \cong \triangle STQ$, $RS = 3x - 3$, $TQ = 2x + 2$, and $QR = x^2 - 2$. What is the length of side \overline{ST} ?

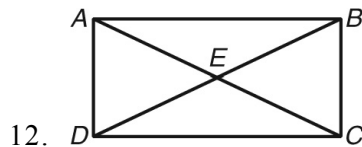
9. Prove $\triangle TUV \cong \triangle TWV$ by using the definition of congruent triangles.



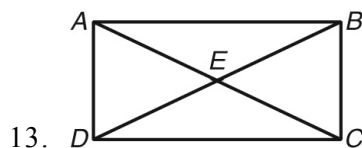
If $\overline{AD} \cong \overline{BC}$, write a statement about point E that would allow you to prove $\triangle AED \cong \triangle CEB$ by the SSS Postulate.



Suppose $\overline{AE} \cong \overline{CE}$ and $\overline{BE} \cong \overline{DE}$. What postulate or theorem will allow you to prove $\triangle BEA \cong \triangle DEC$?



Write *True* or *False*. If $\angle ABC$ and $\angle DCB$ are right angles and $\overline{AD} \parallel \overline{BC}$, you can prove $\triangle ABC \cong \triangle DCB$.



$\angle DAB$ and $\angle BCD$ are right angles. Write a single congruence statement about two segments that would allow you to conclude that $\triangle DAB \cong \triangle BCD$. What theorem or postulate would justify the conclusion?

14. A triangle has vertices $P(a, b)$, $Q(c, d)$, and $R(e, f)$. You are asked to prove that the image $\triangle P'Q'R'$ of $\triangle PQR$ after reflection across the y -axis is congruent to the preimage. What coordinates should you use for the vertices of $\triangle P'Q'R'$?

Name: _____

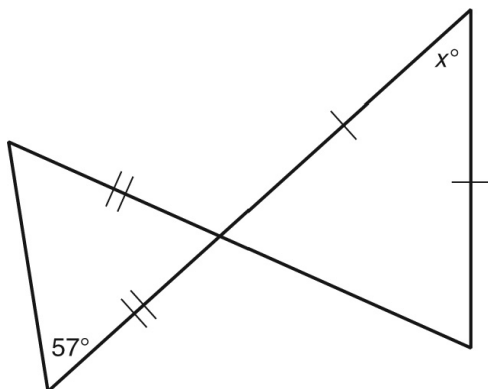
ID: A

15. Assign variables as the coordinates and write a coordinate proof.

Given: Square $ABCD$ with side length of d units

Prove: $AC = BD$

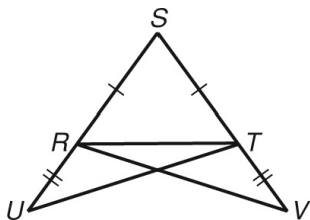
16. What is the value of x ?



Name: _____

ID: A

17. **Given:** $\overline{RU} \cong \overline{TV}$, $\overline{RS} \cong \overline{TS}$



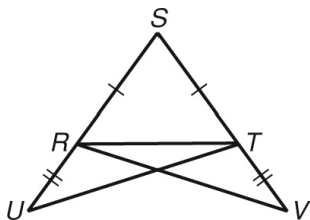
Prove: $\overline{RV} \cong \overline{TU}$

Proof:

Statements	Reasons
1. $\overline{RS} \cong \overline{TS}$	1. Given
2. $\angle SRT \cong \angle STR$	2. _____ ? _____
3. $m\angle SRT = m\angle STR$	3. Def. of $\cong \angle$
4. $m\angle RTV = 180^\circ - m\angle STR$	4. Lin. Pair Thm.
5. $m\angle TRU = 180^\circ - m\angle STR$	5. Lin. Pair Thm. and Subst. (Step 2)
6. $m\angle RTV = m\angle TRU$	6. Subst. Prop. of =
7. $\angle RTV \cong \angle TRU$	7. Def. of $\cong \angle$
8. $\overline{RT} \cong \overline{RT}$	8. Reflex. Prop. of \cong
9. $\overline{RU} \cong \overline{TV}$	9. Given
10. $\triangle RTV \cong \triangle TRU$	10. _____ ? _____
11. $\overline{RV} \cong \overline{TU}$	11. _____ ? _____

What reason belongs in Step 2?

18. **Given:** $\overline{RU} \cong \overline{TV}$, $\overline{RS} \cong \overline{TS}$



Prove: $\overline{RV} \cong \overline{TU}$

Proof:

Statements	Reasons
1. $\overline{RS} \cong \overline{TS}$	1. Given
2. $\angle SRT \cong \angle STR$	2. _____ ? _____
3. $m\angle SRT = m\angle STR$	3. Def. of $\cong \angle$
4. $m\angle RTV = 180^\circ - m\angle STR$	4. Lin. Pair Thm.
5. $m\angle TRU = 180^\circ - m\angle STR$	5. Lin. Pair Thm. and Subst. (Step 2)
6. $m\angle RTV = m\angle TRU$	6. Subst. Prop. of =
7. $\angle RTV \cong \angle TRU$	7. Def. of $\cong \angle$
8. $\overline{RT} \cong \overline{RT}$	8. Reflex. Prop. of \cong
9. $\overline{RU} \cong \overline{TV}$	9. Given
10. $\triangle RTV \cong \triangle TRU$	10. _____ ? _____
11. $\overline{RV} \cong \overline{TU}$	11. _____ ? _____

What reason belongs in Step 11?